



A subsidiary of Pinnacle West Capital Corporation

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VIA FEDERAL EXPRESS

Mr. Stephen Hoffman
U.S. Environmental Protection Agency
Two Potomac Yard
2733 S. Crystal Drive
5th Floor, N-237
Arlington, Virginia 22202-2733

**Re: Arizona Public Service Company's Response to Site Assessment for
the Four Corners Generating Station.**

Dear Mr. Hoffman:

Arizona Public Service Company ("APS") is responding to Matt Hale's letter to Mr. John Denman, requesting **that** APS respond to GEI's September 2009 **Specific Site Assessment Report** regarding coal ash impoundments at APS's Four Corners Generating Station. APS's response to Section 12.0 GEI's report is set forth below. The relevant text of the report (requiring a response) has also been **reproduced** for your **reference**.

APS's Response

12.0 Recommendations

12.1 Corrective Measures for the Structures

12.1.1 Lined Decant Water Impoundment

1. The 2003 calculated factor of safety ~~for~~ static steady-seepage ~~of~~ 1.4 is somewhat below the current state and federal guidance of 1.5. Re-evaluation of this loading condition should be documented and may need to consider less conservative assumptions regarding saturation levels in the underlying fly ash. While the 2003 factors of safety for the LDWI are somewhat below the required minimum, they are not considered deficient with respect to current guidance because the 2003 analysis was based on conservative assumptions and did not reflect the existing unsaturated condition of the underlying fly ash layer.

Response: APS will re-evaluate the west embankment load condition factors of safety. We have retained a consultant, URS Corporation, to perform the engineering analysis. Our re-evaluation will be completed by February 26, 2010.

2. The uneven dam crest on the west embankment should be restored to full height with compacted fill. This maintenance should be performed within the next six months.

Response: APS had previously identified the need for dam crest restoration; and our engineers are working with the New Mexico Office of the State Engineer ("OSE") to obtain approval of our maintenance work plan (with URS Corporation preparing the necessary installation drawings). Pending OSE approval, the work will be completed by November 20, 2009.

3. Tamarisk trees should be removed from the downstream toe of the west embankment (Pond #3 toe) and an evaluation for any potential seepage should be performed in that area. However, instrumentation indicates the embankment is essentially dry and the trees may be supported primarily by water in the nearby Pond #6 seepage ditch.

Response: APS has begun the process of removing the tamarisk trees, and the work is 75% complete. Examination of the area along the toe of the embankment, where the trees existed, indicates that the area is completely dry, and there is no evidence of any seepage or wet areas. The old Pond #6 seepage trench has been cleaned of the trees and is also completely dry. Tree removal efforts will be completed by October 16, 2009.

12.1.2 Decant Drop Inlet Structure.

1. Perform a structural analysis that includes a sensitivity analysis of the HDPE decant drop inlet structure to varying water depth and the influence of multiple penetrations of the manhole sides. Evaluate the decant structure for potential for differential movement between the manhole riser and the foundation slab. Provide protection for the exposed part of the manhole from impacts from vehicles or large equipment.

Response: APS structural engineers have started the recommended analysis. The analysis of the drop inlet structure and the potential for differential movement will be completed by October 30, 2009.

Vehicle barriers will be installed near the manhole to ensure it cannot be impacted by vehicles or equipment in the area. The vehicle barriers will be installed immediately following completion of construction of the current embankment. Installation will be complete before October 30, 2009.

12.4 Any ~~New~~ or Additional Monitoring Instruments, Periodic Observations, or Other Methods of Monitoring Project Works or Conditions That May Be Required

Continue monitoring seepage at the downstream toe ~~of~~ the south embankment (Pond #4 toe) for any changes in seepage ~~quantity~~ and flow rate or evidence that the flow is carrying soil/ash particles ~~from~~ the embankment.

Response: APS believes that the water at **the toe of** the south embankment identified during **the** inspection was **the** result of compaction water run-off from bottom ash construction placement. Since bottom ash construction on the embankment is **now complete**, the ponded water at the toe has dried up **and** is **no longer** visible. APS engineers, however, will continue to monitor the toe of the south **embankment** (via **weekly and monthly inspections**) to **ensure** that there is no seepage from the embankment. Any **new** evidence of seepage will be promptly reported to the OSE.

12.4 Continued: Expand program to include additional monitoring of potential seepage under the dam at the northwest corner of the LAI, where the LAI embankment was not tied in to the underlying Pond 3-4 embankment to provide continuity of seepage control, and where a potential seepage pathway exists if the HDPE lining ~~fails~~. Install additional piezometers to address this potential seepage pathway and expand documentation in APS dam safety inspections to note any evidence of seepage near the downstream toe ~~of~~ the dam in this area.

Response: APS will install additional piezometers and begin monitoring of the NW corner of the LAI as recommended above. **Piezometer** readings **and** monitoring results will be reported to the OSE. The installation of new piezometers **will** be completed **by** December 31, 2009 (**pending** OSE approval). This area will be specifically monitored and addressed in future dam safety inspections.

12.4 Continued: Repair or replace the two settlement plates that do not appear to be ~~providing~~ useful information and that may have been damaged during construction or maintenance activities.

Response: The settlement plates have been inspected by APS and URS Corporation engineers **and** were found to **be** in proper operating condition. Specifically, we determined that the piezometers **were** not reading properly because they had not yet been buried in **embankment** material. The plates are now being buried under construction material, as a part of the current embankment lift, taking place at **the** pond. APS will continue to monitor the piezometer plates **over the** next few **months**, to ensure they are performing properly. Final **validation of the** plates' operation will be complete by November 30, 2009. If they are not operating properly, appropriate corrective action will be taken.

Stephen Hoffman
September 23, 2009
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APS appreciates the opportunity to respond to GEI's recommendations. Please feel free to contact me if the EPA or GEI has any additional questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark A. Schiavoni', written in a cursive style.

Mark A. Schiavoni